## CLAIMS

What is claimed is:

1. A method to derive quantitative information from an x-ray image in a network environment comprising:

providing an digitized x-ray image on a local computer

transmitting the x-ray image to a remote computer; and

analyzing the x-ray image at the remote computer, thereby deriving quantitative information from the x-ray image.

2. The method of claim 1, wherein the analysis of the x-ray image comprises using a computer program on the remote computer.

3. The method of claim 1, wherein said quantitative information is densitometric information.

4. The method of claim 3, wherein said densitometric information is bone mineral density.

5. The method of claim 3, wherein said densitometric information is density of selected soft-tissues or organs.

6. The method of claim 1, wherein the x-ray image further includes an external standard.

7. The method of claim 6, wherein the external standard comprises a calibration phantom.

8. The method of claim 1, wherein said quantitative information is information on the morphology of a structure.

9. The method of claim 8, wherein said information on the morphology of a structure is information on the two-dimensional arrangement of individual components forming said structure.

10. The method of claim 8, wherein said information on the morphology of a structure is information on the three-dimensional arrangement of individual components forming said structure.

11. The method of claim 8, wherein said structure is bone.

12. The method of claim 11, wherein said information is selected from the group consisting of trabecular thickness; trabecular spacing; two-dimensional or three-dimensional spaces between trabecular; two-dimensional or three-dimensional architecture of the trabecular network.

13. The method of claim 1, further comprising transmitting x-ray acquisition parameters to the remote computer.

14. The method of claim 13, wherein the x-ray acquisition parameters are transmitted prior to x-ray image.

15. The method of claim 13, wherein the x-ray acquisition parameters are transmitted simultaneously with the x-ray image.

16. The method of claim 13, wherein the x-ray acquisition parameters are transmitted after to the x-ray image.

17. The method of claim 13, wherein the x-ray acquisition parameters are selected from the group consisting of x-ray tube voltage, x-ray energy, x-ray tube current, film-focus distance, object-film distance, x-ray collimation, focal spot size, spatial resolution of the x-ray system, filter technique, and film-focus distance.

18. The method of claim 1, wherein the x-ray image further comprises one or more internal standards.

19. The method of claim 18, wherein the internal standard is density of a tissue of a human or air surrounding a structure.

20. The method of claim 19, wherein the internal standard is density of a tissue and the tissue is selected from the group consisting of subcutaneous fat, bone and muscle.

21. The method of claim 1, wherein the information is encrypted prior to transmission.

22. The method of claim 1, further comprising generating a diagnostic report based on the quantitative information.

23. The method of claim 22, wherein said diagnostic report provides information on a patient's state of health.

24. The method of claim 23, wherein the state of health is selected from the group consisting of bone mineral density status and fracture risk.

25. The method of claim 23, further comprising generating a bill for the diagnostic report.

26. The method of claim 25, wherein the bill is generated by a computer program on the remote computer.

27. The method of claim 1, wherein the x-ray image is an x-ray film.

28. The method of claim 27, wherein the x-ray film image is digitized.

29. The method of claim 28, wherein the film is digitized using a scanning unit.

30. The method of claim 27, wherein said x-ray film image is acquired digitally.

31. The method of claim 30, wherein the digital x-ray film image is acquired using a selenium detector system or a silicon detector system.

32. An x-ray assembly for determining bone mineral density comprising
an x-ray film holder
x-ray film and
a calibration phantom comprising at least one marker positioned in an area of known density.

33. The assembly according to claim 32, wherein the calibration phantom projects free of bone tissue.

34. The assembly of claim 32, wherein the calibration phantom is attached to the x-ray film holder or a detector system.

35. The assembly of claim 32, wherein the calibration phantom is integral to the x-ray film holder.

36. The assembly of claim 32, wherein the x-ray assembly is a dental x-ray assembly.

37. The assembly of claim 32, wherein the calibration phantom comprises a stepwedge.

38. The assembly of claim 32, wherein the calibration phantom comprises a plurality of fluid-filled chambers.

39. The assembly of claim 32, wherein the marker is a geometric pattern selected from the group consisting of circles, stars, squares, crescents, ovals, multiple-sided objects, irregularly shaped objects and combinations thereof.

40. An x-ray assembly for determining bone mineral density comprising
an x-ray film holder
x-ray film and
a calibration phantom comprising at least one marker positioned in an area of known density, wherein the calibration phantom is attached to the x-ray film.

41. The assembly of claim 40, wherein the calibration phantom is integral to the x-ray film.

42. The assembly of claim 41, wherein the calibration phantom is included between two of the physical layers of the x-ray film.

43. The assembly of claim 41, wherein the calibration phantom is included within one of the physical layers of the x-ray film.

44. A method of accurately determining bone mineral density of an x-ray image, the method comprising:

providing an assembly according to claim 32, wherein the calibration phantom is positioned such that x-rays pass through a subject and the calibration phantom simultaneously, wherein the calibration phantom projects free of materials that alter its' apparent density;

creating an image of the phantom and the portion of the subject's anatomy; and

comparing the image of the phantom and the subject's anatomy to determine bone mineral density of the subject.

45. The method of claim 44, wherein the x-ray image is a dental x-ray.

46. The method of claim 44, wherein said comparing is performed in a network environment.

47. A kit comprising a calibration phantom with an integrated geometric pattern; an x-ray imaging assembly and computer programs, wherein said computer programs analyze and assess bone mineral density.

48. A method of diagnosing osteoporosis comprising analyzing an x-ray obtained by the method of claim 1.

49. A method of treating osteoporosis comprising diagnosing osteoporosis according to the method of claim 48 and administering a suitable treatment.

50. The method of claim 49, wherein the treatment comprises administering an anti-resorptive agent or an anabolic agent.

5